

THE DIPTERA (CALYPTRATAE) OF THE SANDWELL VALLEY, WEST BROMWICH.

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Calliphoridae

The Calliphoridae provide interesting records, three species of limited distribution occurring, these being *Bellardia unxia*, the least common representative of an otherwise abundant genus, *Pollenia varia*, of which only a single specimen has been taken, and *Calliphora subalpina* which occurs in some numbers in most woodland in the valley. The latter species is not only considered an uncommon insect but also an unlikely capture in this area according to present knowledge of its distribution (Van Emden 1954). Of the other species, *Cynomyia mortuorum* has been recorded during most summer months on one particular site but it has never been numerous, *Phormia terraenovae* also falling into this category. The remaining flies of this family are usually abundant throughout the year.

Scathophagidae

Although certain flies of this family are very numerous, the number of species occurring is not great. The four flies of the genus *Scathophaga* are all common on most sites, several other diptera including the bluebottle *Calliphora vicina* and the crane fly *Limonia tripunctata* having been recorded as the prey of *S. stercoraria*. *Norellisoma spinimanum* is often abundant in gardens and at margins of streams. Of the other genera, *Nanna fasciata* is common in many damp places during spring and early summer, *Juncus* species often being very good indicators of likely sites for this fly, while *Carex* beds at the margins of the larger pools house good populations of *Cordilura impudica* and *C. pudica*. *Cleigastra apicalis* is distributed even more widely in similar situations, on one occasion a specimen being taken with the tipulid *Erioptera griseipennis* as prey.

Anthomyiidae

At present there is no R.E.S. handbook for identification of Anthomyiidae and anyone undertaking this task has to rely to a fairly large extent on continental works, as English papers deal with a few genera only. It is therefore probable that the family is still unfamiliar to many dipterists and for this reason, a certain amount of general information on most of the species recorded is included here.

One of the features that makes the family a difficult one to study is that species, even in different genera, are so very similar in the field. This usually means that it is necessary to make ex-

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tensive captures and carry out a microscopic examination of every insect to ensure that species are not overlooked. An additional complication is encountered in that females are often difficult, if not impossible, to identify with certainty and in most cases only careful examination of the genitalia of the males enables the flies to be identified correctly. The species list given for the valley is, therefore, with two exceptions (*Leucophora grisella* and *Eustalomyia festiva*) based on the examination of males.

Of the genus *Chirosia*, three species have been recorded: *C. albitarsis* and *C. parvicornis* having been taken on bracken, the larvae mining the leaf of that plant according to Collin (1955). His observations suggesting the probability of a flight period limited to May and June for *parvicornis* also seem to be corroborated, as the fly was not seen in the locality after the first week in June. The final species recorded, *C. flavipennis*, also occurred in the vicinity of bracken, although no direct association with the plant seemed evident.

Many *Pegohylemyia* species do not seem to be confined to a particular habitat, *P. fugax* being one of the most abundant and widely distributed flies in the locality. The same comments apply to flies of the genus *Lasiomma*, the two species recorded often being found basking on fences during spring and early summer.

The five species of *Hydrophoria* have all been taken in woodland, *H. annulata* and *H. caudata* having been discovered in very shaded situations, the others in open glades or at the margin.

Of the very common anthomyid species, *Craspedochaeta pullula* and *Anthomyia imbrida* are good examples. Both are found in nearly every situation although *C. pullula* does not seem to favour shade as much as *A. imbrida*. Also encountered in numbers during spring and early summer are *Phorbia securis* and *sepia*, which may often be seen basking on fences.

The genus *Leucophora*, like Sarcophagidae associated with Hymenoptera, is well represented and four species are recorded. The closely similar *L. obtusa* and *L. personata* are abroad fairly early in the year in the vicinity of bare ground such as paths and stone heaps, often being present in some numbers. *L. cinerea* and *L. grisella* occur rather later and are apparently more selective in their chosen sites, isolated specimens have so far been discovered only in the vicinity of natural sand pits occurring as a consequence of the weathering of breccias. On the sites mentioned, hymenopterous activity was usually evident, but no attempt was made to determine species present or study any possible associations between the wasps and flies.

Smith (1971) gives information on the occurrence and distribution of *Eustalomyia* species associated with solitary wasps nesting in dead wood and Chandler (1976) also comments on the occurrence of these flies. There seems to be agreement that the species are uncommon in Britain except in certain localities. Observations of *E. festiva* and *E. histrio* in the valley indicate a distinct preference for ancient woodlands, as the insects are only found in one such

area of about 20 acres, being particularly associated with ash trees, on which both species have been taken while basking. Wooden posts and rails nearby were also popular for this purpose. Although the flies have a long flight period in the valley, they never occur in numbers and it is interesting to note that while males of *E. histrio* have been taken, no male of *E. festiva* has yet been captured, an experience also recorded by Chandler (*op.cit.*).

Of the *Delia* species, four seem to be abundant, but *D. lamelliseta* has been taken only once on open meadow land and the solitary *D. criniventris* specimen was netted at the border of a marshy pond in woodland. Of the genus *Hylemya*, all three species seem common in woodland and scrub areas throughout the valley, *H. strenua* also occurring in gardens.

Some flies of certain calypterate genera notably *Melanomya* (Rhinophoridae), *Hebecnema* and *Spilogona* (Muscidae), are conspicuous in the field by virtue of their strongly blackened wings and males of the anthomyid genus *Heterostylodes* also exhibit this feature. *H. pratensis* was taken at the margin of a wood where it was nearly overlooked owing to its similarity to flies of the other genera mentioned.

While *Paregle radicum* can stake a good claim to be the most abundant and widely distributed Anthomyid in the locality, *P. cinerella* has been recorded only once, a specimen being discovered on a paddock fence post. The well known association of certain flies of the genus *Egle* with *Salix* species is confirmed, the three species all having been taken in early spring on *Salix caprea* catkins, *E. muscaria* having also been captured in a number of other situations. *Nupedia infirma* apparently has a very long flight period and has been found on wooden railings during most of the summer months. It has been recorded as the prey of *Dioctria baumhaueri* on two occasions. In early and late summer, *Pseudonupedia intersecta* often occurs in numbers in such places. The same cannot be said of *Emmesomyia villica* which seems not only to have a limited flight period, but also to be a scarce species. Two males were captured on hawthorn on consecutive dates, but visits to the same area on a number of other days throughout the year failed to reveal any more specimens and none were found elsewhere.

Among the larger anthomyids found in the woodlands is *Pegomya praepotens*, which is to be seen on tree trunks and low vegetation during June and July. According to Chandler (*personal communication*) this species is probably one of the rarer flies of the family.

In concluding, it is surprising that more species of the genus *Pegomya* have not yet been found. Of the two species so far found, *P. nigritarsis* is by far the most common.

Fanniidae

Fanniidae discovered include species that are often extremely numerous in the valley. *Fannia canicularis*, *F. scalaris*, *F. monilis*, *F. postica* and *F. coracina* have been regularly found in my garden, the latter species having also been bred out, together with *F. vesparia*

from a nest of *Vespula vulgaris* (L) found locally. Many of the other species seem to be extremely common at the margins of woodland while *F. hamata* is often found in more shaded localities where it is one of the most accomplished 'hoverers'. The rarer species of the genus *Fannia* have not so far occurred during the survey, the only exception being *F. aequilineata*, which was bred out from detritus found in the hollowed stump of a horse chestnut. Fonseca (1968) recommends breeding experiments as a method most likely to provide the rarer species of the genus and this record would appear to bear this out.

Muscidae

Perhaps the most notable feature of the muscid records is the presence of so many common species. Very few unusual ones occur and, save for *Alloeostylus sudeticus*, a predominantly northern fly with a single southern record (Somerset — Hinton Charterhouse), they do not appear to have any special distributional significance. Of the less frequently encountered species, *Acanthiptera rohrelliformis* has been bred out from a nest of *Vespula vulgaris*, but has only twice been discovered in the field. *Phaonia vittifera* and *Lophosceles mutatus*, flies with a scattered distribution over the British Isles also occur, while *Hydrotaea parva* has been found on *Carex* species at the margin of a pond. Of the genus *Mydaea*, five species are found in woodland, the scarce *M. ancilla* being not infrequent. A Staffordshire record for the uncommon *Graphomyia picta* (Madeley), is given in the transactions of the North Staffordshire Field Club (*op. cit.*). The fly is not infrequent on *Carex* species in marshy areas of the valley.

Conclusions.

In general, it seems probable that the Sandwell Valley, West Bromwich, houses a rich fauna of Diptera Calyptratae and that the list given is by no means complete. As yet, no species belonging to the families Oestridae and Gasterophilidae has been found. This may well be a consequence of the gradual loss of farmland, for although horses for recreational purposes are present in some numbers, the varied livestock that might have supported several species of these specialised flies in the past has almost disappeared. No records exist for Hippoboscidae or Nycteribiidae, but the simple traditional collecting techniques used here were hardly designed to make such captures and co-operation with specialists in other orders will probably yield specimens of these flies in due course. The Diptera collected possess a wide range of different life histories and generally confirm much of the present distribution data as given in the R.E.S. handbooks. Explanations as to why certain sub-families are so poorly represented will have to wait until the remaining fauna and flora of the area have been more fully investigated when the overall picture of insect interrelationships in the district may be more complete.

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References

- Ackland, D. M. 1969. Notes on the Palearctic species of *Egle* R-D (Dipt-Anthomyiidae) with Descriptions of Two New Species. *Ent. Mon. Mag.* **105**, P. 185-192.
- Brindle, A. et al. The Insects of the Malham Tarn Area. *Proc. Leeds Phil. & Lit. Soc.* Vol. IX (2) p. 76-90.
- Britten, H. 1952. Diptera of Staffordshire. Part 2. Edited by J. Edwards. *Transactions of the North Staffs Field Club* p. 44-58.
- Brown, E. 1863. *The Natural History of Tutbury*. p.210-23.
- Chandler, P. J. 1976. Notes on some Uncommon Calypterate Flies (Diptera) Observed During Recent Years. *Ent. Rec.* **88**: 14-19.
- Collin, J. E. 1920. A Contribution Towards the Knowledge of the Anthomyid Genera *Hammomyia* and *Hylephila* of Rondani (Diptera). *Trans. Ent. Soc. Lond.* **1920**: 305-26.
- Collin, J. E. 1955. Genera and species of Anthomyiidae allied to *Chirosia*. *Proc. Roy. Ent. Soc. Lond.* series B23 (5-6): 95-102.
- Collin, J. E. 1958. A Short Synopsis of the British Scathophagidae (Diptera). *Trans. Soc. Brit. Ent.* **13** (3) 37-56.
- Day, C. D. 1948. *British Tachinid Flies*. Arbroath 150pp.
- Emden, F. I. van 1954. Tachinidae & Calliphoridae in *Handbook Ident. Br. Insects* **10**(4a) : 133.
- Fonseca, E. C. M. D'Assis. 1956. A Review of the British Subfamilies and Genera of the Family Muscidae (Diptera). *Trans. Soc. Brit. Ent.* **12**: 113-128.
- Fonseca, E. C. M. D'Assis. 1968. Muscidae in *Handbook Ident. Br. Insects*, Vol. X 4(6): 1-119.
- Hennig, W. 1976. In LINDNER 'Die Fliegen der Palaearktischen Region'. 63a — 'Anthomyiidae' p. 1-707.
- Kloet, G. S. & Hincks, W. D. 1976. *A Check List of British Insects*. second edition (completely revised). Part 5. Diptera and Siphonaptera. *Royal Ent. Soc. Lond.* 139pp.
- Ringdahl, O. 1952. A Survey of the Swedish species of *Hydrophoria* and *Acroptena*. *J. Soc. Brit. Ent.* **4**(4): 75-83.
- Smith, K. G. V. 1971. *Eustalomyia hilaris* Fallen (Dipt. Anthomyiidae) Confirmed as British with Notes on other species of the Genus. *Ent. Gaz.* **22** : 55-60.
- Stubbs, A.E. et al. 1977. The British Insect Fauna in 'Antenna', (*Bull. Royal Ent. Soc. Lond.*). **1** (1) : 23 - 27.
- Sutton, S. 1972. *Woodlice*. Ginn & Company. p 58-60.